

REMARKS

Claims 32, 71, 74-90 and 93-131 are pending in this application. By this Amendment, claims 71, 74, 87, 90, 104, 117, 121 and 131 are amended and claims 72, 73, 91 and 92 are canceled. Support for the amendments can be found, for example, on page 11, lines 21-23 of the originally filed specification. No new matter is added.

Entry of the amendments is proper under 37 CFR §1.116 because the amendments: (a) place the application in condition for allowance for the reasons discussed herein; (b) do not raise any new issue requiring further search and/or consideration as the amendments amplify issues previously discussed throughout prosecution; (c) satisfy a requirement of form asserted in the previous Office Action; (d) do not present any additional claims without canceling a corresponding number of finally rejected claims; and (e) place the application in better form for appeal, should an appeal be necessary. The amendments are necessary and were not earlier presented because they are made in response to arguments raised in the final rejection. Entry of the amendments is thus respectfully requested.

Applicant would like to thank the Examiner for indicating that claims 32 and 105 contain allowable subject matter.

Applicant appreciates the courtesies shown to Applicant and Applicant's representatives by Examiner Chang in the August 14, 2009 telephone interview. Applicant's separate record of the substance of the interview is incorporated into the following remarks.

Claims 90, 121 and 131 were objected to for informalities. Claims 90, 121 and 131 have been amended responsive to the objection. It is respectfully requested that the objection be withdrawn.

Claims 71, 72, 75, 77, 79, 80, 82-89, 91, 93-95 and 98-103 are rejected under 35 U.S.C. §103(a) over Mallik, U.S. Patent No. 5,128,779, in view of Heckenkamp et al.,

U.S. Patent No. 5,801,857. Claims 72 and 91 have been canceled, rendering their rejection moot. The rejection with respect to the remaining claims is respectfully traversed.

Claim 71 recites the first structure having a surface relief microstructure and including a reflective layer formed by a high refractive index dielectric material and also recites that the replay characteristics of the structures generate a visually integrated image whose optically variable generating effect appears to derive from one optical effect generating structure.

Claim 87 recites similar features. Applicant respectfully asserts that the applied references fail to teach or suggest these features.

The Office Action alleges that Mallik has a first structure having a surface relief microstructure. However, Mallik, as shown in Fig. 11, has two metallic layers. In particular, the first holographic structure in Mallik has a metallic layer 25. Thus, Mallik fails to teach or suggest a reflective layer formed by a high refractive index dielectric material. These features have the advantage of providing a high refractive index reflective layer such that it becomes very difficult to distinguish between those components of the resultant visually integrated image generated by the first and second optically variable effect generating structures. Cueli, U.S. Patent No. 5,513,019, cited in the rejection of canceled claim 73, fails to recognize this advantage.

Further, Applicant respectfully asserts that Mallik fails to teach or suggest a visually integrated image whose optically variable generating effect appears to derive from one optical effect generating structure as recited in claims 71 and 87.

As discussed during the August 14, 2009 telephone interview, the Examiner alleges that Mallik teaches a visually integrated image, referring to col. 12, lines 28-30. However, this passage must be read in the context of the full paragraph which refers to a "partially metallized hologram" which corresponds to the first hologram as shown in Fig. 6E, while the second hologram is made as shown in Fig. 6 (col. 12, lines 20-25). The hologram of Fig. 6E

includes a "clear plastic film 21" (col. 4, lines 32-33). Thus, the "transparent substrate of the first hologram" referred to in col. 12, lines 28-30 is layer 21. This passage therefore says no more than that each holographic image is viewable through the layer 21. It does not state that the two images are viewed at the same time. This is consistent with all the other passages in Mallik such as col. 9, lines 45-49, specifying that the holograms can be viewed "one at a time;" col. 10, lines 7-11, specifying that the "images recorded are separably reconstructed;" and col. 11, lines 48-50, specifying that "only one image can be seen at one time."

Thus, Applicant respectfully asserts that Mallik fails to teach or suggest a visually integrated image whose optically variable effect appears to derive from one optical effect generating structure as recited in claims 71 and 87.

Further, these features provide the advantage that it is very difficult for the observer to recognize that, in fact, the resulting image is due to two different optically variable effect generating structures, thus making it very difficult for such a device to be counterfeited. Mallik fails to recognize this advantage.

Heckenkamp fails to overcome the deficiencies of Mallik because Heckenkamp is only cited for the notion that volume holograms are known in the art.

Claims 75, 77, 79-86, 88, 89, 93-95 and 98-103 are patentable by reason of their dependency from one of independent claims 71 and 87, as well as for the additional features they recite.

It is respectfully requested that the rejection be withdrawn.

Claims 73, 74 and 92 are rejected under 35 U.S.C. §103(a) over Mallik in view of Heckenkamp and Cueli. Claims 73 and 92 have been canceled, rendering their rejection moot. The rejection with respect to claim 74 is respectfully traversed.

As discussed above, Mallik and Heckenkamp fail to teach or suggest all of the features of independent claim 71. Further, Cueli fails to overcome the deficiencies of Mallik

and Heckenkamp. Thus, claim 74 is patentable by reason of its dependency from independent claim 71, as well as for the additional features it recites.

It is respectfully requested that the rejection be withdrawn.

Claims 76, 81 and 90 are rejected under 35 U.S.C. §103(a) over Mallik in view of Heckenkamp and Staub et al., U.S. Patent No. 5,886,798. The rejection is respectfully traversed.

As discussed above, Mallik and Heckenkamp fail to teach or suggest all of the features of independent claims 71 and 87. Further, Staub fails to overcome the deficiencies of Mallik and Heckenkamp. Thus, claims 76, 81 and 90 are patentable by reason of their dependency from one of independent claims 71 and 87, as well as for the additional features they recite.

It is respectfully requested that the rejection be withdrawn.

Claims 78 and 97 are rejected under 35 U.S.C. §103(a) over Mallik in view of Heckenkamp and Ishibashi et al., U.S. Patent No. 6,861,388. The rejection is respectfully traversed.

As discussed above, Mallik and Heckenkamp fail to teach or suggest all of the features of independent claims 71 and 87. Further, Ishibashi fails to overcome the deficiencies of Mallik and Heckenkamp. Thus, claims 78 and 97 are patentable by reason of their dependency from one of independent claims 71 and 87, as well as for the additional features they recite.

It is respectfully requested that the rejection be withdrawn.

Claim 96 is rejected under 35 U.S.C. §103(a) over Mallik in view of Heckenkamp and Kaule et al., U.S. Patent No. 6,294,241. The rejection is respectfully traversed.

As discussed above, Mallik and Heckenkamp fail to teach or suggest all of the features of independent claim 87. Further, Kaule fails to overcome the deficiencies of Mallik

and Heckenkamp. Thus, claim 96 is patentable by reason of its dependency from independent claim 87, as well as for the additional features it recites.

Claims 104, 106, 107, 109, 111-120, 122, 123 and 126-131 are rejected under 35 U.S.C. §103(a) over Mallik in view of Heckenkamp. The rejection is respectfully traversed.

Claims 104 and 117 recite a visually integrated image whose optically variable generating effect appears to derive from one optical effect generating structure. As discussed above with respect to claim 71, Mallik and Heckenkamp fail to teach or suggest these features.

Claim 104 recites that the first optically variable effect generating structure includes a discontinuous metallic layer registered with the surface relief microstructure of the first optically variable effect generating structure. Applicant respectfully asserts that the applied references fail to teach or suggest these features. These arguments were presented in the Amendment filed on February 26, 2009 but were not addressed in the previous Office Action. The arguments are repeated here for convenience.

Applicant respectfully asserts that claims 104-131 are patentable for at least the following reasons.

These claims relate to the embodiment in which there are two superposed surface relief microstructures. Importantly, a discontinuous metallic layer is provided in conjunction with the first microstructure in register with the microstructure. The significance of the term "in register" is that it means metal is provided in all regions where there is microstructure but not in regions where there is no microstructure. This means that the brightness of the first holographic optically variable effect generating structure can be maintained but at the same time the underlying second structure is visible.

This should be contrasted with the invention of Mallik in which a regular array of spots 25 of reflective material is provided associated with the surface relief hologram 23. It can readily be seen in Mallik's Figure 11 that some regions of that hologram are not provided with the metallic spots 25 which means that the optimum replay brightness of that hologram is immediately reduced. It can be seen in Mallik's Figure 11 that about 50% of the surface of the hologram 23 is provided with metallic spots meaning that there will be a 50% reduction in brightness. On the other hand, with the invention, because the metallic layer is provided in register with the microstructure, the microstructure is fully covered by a metallic layer and full brightness is maintained. The underlying hologram in the invention is viewed through non-embossed regions of the layer provided in the first structure. This is not shown in the specification.

The independent claims also refer to the inclusion of a dye or pigment between the two optically variable effect generating structures. The Office Action acknowledged that this feature is not disclosed in Mallik (in reference to previous claim 48) but argues that it would be obvious in view of the use in Mallik of a printed photograph or writing. However, this printed photograph is not provided between two optically variable effect generating structures but simply on one surface of the substrate 11 (column 4, lines 29-32). There is certainly no suggestion or motivation to incorporate such printing or writing between the two optically variable effect generating structures described from column 9, line 35.

The use of such dyes and pigments enables very special optical effects to be generated in combination with the optical variable effect generating structures making the device very difficult to counterfeit but yet easy to authenticate.

Claims 106, 107, 109, 111-116, 118-120, 122, 123 and 126-131 are patentable by reason of their dependency from one of independent claims 104 and 117, as well as for the additional features they recite.

It is respectfully requested that the rejection be withdrawn.

Claims 108, 113 and 121 are rejected under 35 U.S.C. §103(a) over Mallik in view of Heckenkamp and Staub. The rejection is respectfully traversed.

As discussed above, Mallik and Heckenkamp fail to teach or suggest all of the features of independent claims 104 and 117. Further, Staub fails to overcome the deficiencies of Mallik and Heckenkamp. Thus, claims 108, 113 and 121 are patentable by reason of their dependency from independent claims 104 and 117, as well as for the additional features they recite.

It is respectfully requested that the rejection be withdrawn.

Claims 110 and 125 are rejected under 35 U.S.C. §103(a) over Mallik in view of Heckenkamp and Ishibashi. The rejection is respectfully traversed.

As discussed above, Mallik and Heckenkamp fail to teach or suggest all of the features of independent claims 104 and 117. Further, Ishibashi fails to overcome the deficiencies of Mallik and Heckenkamp. Thus, claims 110 and 125 are patentable by reason of their dependency from independent claims 104 and 117, as well as for the additional features they recite.

It is respectfully requested that the rejection be withdrawn.

Claim 124 is rejected under 35 U.S.C. §103(a) over Mallik in view of Heckenkamp and Kaule. The rejection is respectfully traversed.

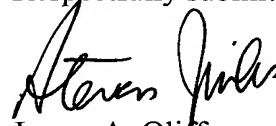
As discussed above, Mallik and Heckenkamp fail to teach or suggest all of the features of independent claim 117. Further, Kaule fails to overcome the deficiencies of Mallik and Heckenkamp. Thus, claim 124 is patentable by reason of its dependency from independent claim 117, as well as for the additional features it recites.

It is respectfully requested that the rejection be withdrawn.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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